Claim Amendments

42. (currently amended): An electrochemical cell assembly, comprising:

a. an electrochemical cell comprising a container comprising a wall defining an interior volume, electrolyte contained within the interior volume, an anode and a cathode, the cell having a light path that passes through the wall and a portion of the interior volume of the container in which gas collects before or during failure of the electrochemical cell from loss of the electrolyte from the interior volume; and

b. a gas pocket detection assembly comprising:

(i) a light beam source aligned to direct a light beam along the light path; and

(ii) a light beam detector configured to detect the light beam exiting the container and to produce a first signal when the light beam travels a direct path through the interior volume of the container when no gas pocket is present in the light path and a second signal when the light beam travels a refracted path through the interior volume of the container when a gas pocket is present in the electrolyte in the light path.

43. (previously presented): The electrochemical cell assembly of claim 42, wherein the light beam source is a laser.

44. (previously presented): The electrochemical cell of claim 42, wherein the wall is substantially clear.

45. (previously presented): The electrochemical cell of claim 42, wherein the container is cylindrical and has end portions, the wall is annular, and the anode and cathode are located adjacent to the end portions.

46. (previously presented): The electrochemical cell of claim 45, wherein the annular wall is substantially clear.

47. (previously presented): The electrochemical cell of claim 42, wherein the light beam detector is located in the refracted path and not in the direct path.

48. (previously presented): The electrochemical cell of claim 42, wherein the light beam detector is located in the direct path and not in the refracted path.

49. (previously presented): The electrochemical cell of claim 42, wherein the light beam detector is located in the direct path and a second light beam detector is located in the refracted path.

50. (previously presented): The electrochemical cell of claim 42, further comprising an alarm circuit in electrical communication with the gas pocket detection assembly to monitor the cell for the presence of a gas pocket in the light path.

51. (currently amended): A method for predicting failure of an electrochemical cell comprising a container having a wall defining an interior volume, electrolyte contained within the interior volume, ~~the cell further comprising~~ an anode and a cathode, comprising the steps of:

a) passing a light beam through a light path in the interior volume, wherein the light path passes through a portion of the interior volume of the container in which gas collects before or during failure of the electrochemical cell from loss of electrolyte from the interior volume; and

b) detecting differences in the path of the light beam with a light beam detector configured to detect the light beam exiting the container and to produce a first signal when the light beam travels a direct path through the interior volume of the container when no gas pocket is present in electrolyte in the light path and a second signal when the light beam travels a refracted path through the interior volume of the container when a gas pocket is present in electrolyte in the light path.

52. (previously presented): The method of claim 51, wherein the light beam source is a laser.

53. (previously presented): The method of claim 51, wherein the wall is substantially clear.

54. (previously presented): The method of claim 51, wherein the container is cylindrical and has end portions, the wall is annular, and the anode and the cathode are located adjacent to the end portions.

55. (previously presented): The method of claim 54, wherein the annular wall is substantially clear.

56. (previously presented): The method of claim 51, wherein the light beam detector is located in the refracted path and not in the direct path.

57. (previously presented): The method of claim 51, wherein the light beam detector is located in the direct path and not in the refracted path.

58. (previously presented): The method of claim 51, wherein the light beam detector is located in the direct path and a second light beam detector is located in the refracted path.

59. (previously presented): The method of claim 51, further comprising an alarm circuit in electrical communication with the gas pocket detection assembly to monitor the cell for one of formation and enlargement of a gas pocket in the container.

60. (currently amended): A method for detecting gas bubbles in an electrochemical cell that comprises a wall defining an internal volume, an anode, a cathode and an electrolyte contained within the internal volume, the method comprising the step of directing a light beam on a light path that passes through a portion of the interior volume where gas collects before or during failure of the electrochemical cell from loss of electrolyte from the interior volume and at one or more light beam detectors, wherein one or more light beam detectors are configured to produce a first signal when a gas pocket is located in the light path and a second signal when no gas pocket is located in the light path.

61. (previously presented): The method of claim 60, wherein the light beam is a laser beam.

62. (previously presented): The method of claim 60, wherein the electrochemical cell is a gas sensor.

63. (previously presented): The method of claim 60, wherein the electrochemical cell is an oxygen sensor.

64. (currently amended): A method for retrofitting an electrochemical gas sensor assembly comprising an electrochemical cell comprising a container having a wall defining an interior volume, an anode, a cathode and electrolyte contained within the interior volume, the container having a light path passing through the wall and a

portion of the interior volume of the container in which gas collects before or during failure of the electrochemical cell from loss of electrolyte from the interior volume, the method comprising the step of attaching a gas pocket detection assembly to the gas sensor, the gas pocket detection assembly comprising:

(i) a light beam source aligned to direct a light beam along the light path; and

(ii) a light beam detector configured to detect the light beam exiting the container and to produce a first signal when the light beam travels a direct path through the interior volume of the container when no gas pocket is present in the light path and a second signal when the light beam travels a refracted path through the interior volume of the container when a gas pocket is present in the electrolyte in the light path.

65. (currently amended): An apparatus for retrofitting an electrochemical gas sensor device including an electrochemical cell comprising a container having a wall defining an interior volume, an anode, a cathode and an electrolyte contained within the interior volume, the container having a light path passing through the wall and a portion of the interior volume of the container in which gas collects before or during failure of the electrochemical cell from loss of electrolyte from the interior volume, the apparatus comprising parts of a gas pocket detector assembly, the parts comprising:

(a) a light beam source;

(b) a light beam detector; and

(c) a bracket or brackets configured to:

(i) engage the light beam source and to position the light beam source to direct a light beam along the light path through the interior volume; and

(ii) engage a light beam detector and position the light beam detector to detect a light beam from the light beam source exiting the container from the interior volume so that the detector produces a first signal when the light beam travels a direct path through the interior volume of the container when no gas pocket in the electrolyte is located in

the light path and a second signal when the light beam travels a refracted path through the interior volume when no gas pocket is present in the electrolyte in the light path.

66. (previously presented): The apparatus of claim 65, wherein the light beam source is a laser.

67. (previously presented): The apparatus of claim 65, wherein the electrochemical cell is a gas sensor.

68. (previously presented): The apparatus of claim 67, wherein the electrochemical cell is an oxygen sensor.

69. (previously presented): The apparatus of claim 67, further comprising an electrochemical cell.

70. (previously presented): The apparatus of claim 67, further comprising computer software and/or hardware comprising an alarm circuit in electrical communication with the gas pocket detection assembly to monitor the cell for the presence of a gas pocket in the light path.

71. (cancelled)

72. (new): The electrochemical cell assembly of claim 42, wherein the electrochemical cell is a gas sensor.

73. (new): The electrochemical cell assembly of claim 72, wherein the gas sensor is an oxygen sensor.

74. (new): The method of claim 51, wherein the electrochemical cell is a gas sensor.

75. (new): The method of claim 74, wherein the gas sensor is an oxygen sensor.